LISTING OF THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A system comprising:

a tunable filter driven by an output signal of a transmitter to provide a filtered output signal, the filtered output signal being combined with a signal from an associated communications network to provide a receiver signal that is substantially free from echo caused by the output signal of the transmitter; and

a control system configured to selectively adjust at least one tunable component of the tunable filter to set ~~at least one of~~ at least one pole and at least one zero of a transfer function of the tunable filter so that the transfer function of the tunable filter corresponds to loop characteristics of the associated communications network.

2. (Original) The system of claim 1, the associated communications network comprising a digital subscriber link.

3. (Original) The system of claim 1, the tunable filter further comprising a hybrid circuit comprising at least one amplifier stage and at least one tunable component located in at least one of a feedback path and a feedforward path of the amplifier stage.

4. (Original) The system of claim 1, further comprising a line coupling network that provides an interface between the transmitter and the associated communications network.

5. (Previously Presented) The system of claim 1, the signal from the associated communications network comprising an aggregate line signal that includes a component corresponding to the echo caused by the transmitter output signal and a receiver signal component, the system further comprising a summer that combines the filtered output signal from the tunable filter and the aggregate line signal to provide the receiver signal that is substantially free from echo caused by the output signal of the transmitter.

6. (Cancelled)

7. (Currently Amended) The system of claim 5, the control system further comprising a tuning algorithm that selectively adjusts at least one variable passive component in the tunable filter to provide the tunable filter with a desired frequency response corresponding to the loop characteristics of the associated communications network.

8. (Original) The system of claim 7, the at least one variable passive component comprising at least one capacitor.

9. (Original) The system of claim 7, further comprising a switch network coupled to adjust the at least one variable passive component so that the tunable filter achieves the desired frequency response.

10. (Original) The system of claim 9, further comprising a decoder that receives a control signal from the control system and provides an output signal to activate the switch network to set a desired impedance for the at least one variable passive component.

11. (Original) The system of claim 7, the tunable filter comprising a biquad filter, the at least one variable passive component located in at least one of a feedback path and a feedforward path of the biquad filter.

12. (Currently Amended) A system, comprising:

means for separating transmit and receive signals at an interface between a central office and a subscriber loop; ~~and~~

means for decoding a control signal provided by a control system to generate an output signal having one of a plurality of states, each of the plurality of states corresponding to predetermined loop impedance and line coupling characteristics for a respective associated communications network; and

means for selectively tuning the separating means based on the one of the plurality of states of the output signal to set at least one of at least one pole and at least one zero of the means for separating so as to configure the means for separating to have a frequency response that substantially matches the loop impedance and the line coupling characteristics of [[an]] the associated communications network to mitigate echo effects of the transmit signal.

13. (Previously Presented) The system of claim 12, further comprising means for selectively adjusting an impedance parameter in the means for separating to provide the frequency response to the means for separating.

14. (Original) The system of claim 13, the impedance parameter comprising at least a capacitance parameter.

15. (Original) The system of claim 13, the desired frequency response being adaptable to a plurality of predetermined frequency bands associated with the loop impedance and line coupling characteristics.

16. (Currently Amended) A method, comprising

filtering a transmitter signal to provide a filtered transmitter signal having a frequency response;

decoding a control signal to provide a decoder output having a value corresponding to one of a plurality of impedance characteristics that substantially matches predetermined loop impedance characteristics of an associated subscriber loop;

selectively adjusting at least one of at least one pole and at least one zero of a transfer function of a tunable filter of a hybrid based on the output signal to set the frequency response based on the loop impedance characteristics of [[an]] the associated subscriber loop; and

combining the filtered transmitter signal with an aggregate line input signal from the associated communications network to provide a receiver input signal that is substantially free of echo due to the transmitter signal.

17. (Original) The method of claim 16, further comprising determining the loop impedance characteristics of the associated communications network.

18. (Original) The method of claim 17, the determination of the loop impedance characteristics further comprises applying a test signal at a transmitter output comprising the transmitter signal.

19. (Original) The method of claim 16, the selectively adjusting further comprises setting impedance characteristics in at least one of a feedforward path and a feedback path of a tunable hybrid.

20. (Original) The method of claim 19, the at least one of a feedforward path and a feedback path further comprises a capacitor network, the selectively adjusting further comprises setting a desired capacitance for the capacitor network that provides the desired frequency response.

21. (Original) The method of claim 16, further comprising:

applying a test signal to a line in the associated communications network;

measuring a response to the applied test signal; and

re-adjusting the frequency response on the measured response.

22. (Previously Presented) The method of claim 16, the selectively adjusting further comprises:

setting a tunable parameter that changes the frequency response of a hybrid circuit driven by the transmitter signal;

applying a test signal to an associated communications network; and

determining a ratio of a received signal relative to the transmitter signal.

23. (Original) The method of claim 22, storing the tunable parameter setting if a ratio of the received signal to the transmitted signal has improved.

24. (Original) The method of claim 22, the tunable parameter of the hybrid circuit comprising a plurality of settings, the method further comprising selecting the next setting until all of the settings have been tested.

25. (Previously Presented) The system of claim 1, wherein the control system sets the at least one of the at least one pole and the at least one zero are set such that the transfer function of the filter defines a frequency response that substantially matches loop impedance and line coupling characteristics of the associated communications network.

26. (New) The system of claim 10, wherein the output signal has a value corresponding to one of a plurality of different predetermined loop characteristics of respective communications networks, the switch network setting the desired impedance for the at least one variable passive component based on the output signal so that the frequency response of the tunable network substantially matches the loop characteristics of the associated communications network.

27. (New) The system of claim 5, wherein the tunable filter comprises a biquad filter comprising:

a first amplifier; and

a second amplifier connected in series with the first amplifier, the first amplifier having at least one feedback path that comprises at least one first variable passive component, a feedforward path coupled between the first amplifier and the second amplifier that comprises at least one second variable passive component;

wherein the control system is configured to selectively adjust the at least one first variable passive component and the at least one second variable passive component so that the frequency response of the tunable network substantially matches the loop characteristics of the associated communications network.